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EXTENDED REPORTS

On the course of low back pain in general practice: a one year follow up study

Hans J M van den Hoogen, Bart W Koes, Jacques Th M van Eijk, Lex M Bouter, Walter Devillé

Abstract

Objectives—Knowledge on the clinical course of low back pain presented in general practice is poor. Preceding studies offer a fragmentary view only, whereas further knowledge is important to enable the assessment of the prognosis. The object of this study is to investigate the course of low back pain presented in general practice to enable the assessment of the prognosis.

Methods—A one year follow up study on the clinical course of low back pain in consecutive cases receiving usual care in general practice. During a period of two years 15 general practitioners from Amsterdam and surrounding areas included consecutive patients with both chronic and recent onset low back pain. After the initial visit, each patient was monitored for a period of 12 months. The follow up consisted of monthly postal questionnaires on the course of the low back pain and the related disability.

Results—A total of 443 of 605 patients identified were included in the follow up, which was fully completed by 269 patients. In general, patients with less serious low back pain participated less often or did not complete the follow up. At 12 weeks 35% and at the end of the follow up 10% of the population, respectively, still suffered from low back pain. Both the pain and the disability seemed to diminish quickly after the initial visit, and both seemed to stabilise at a lower level if the low back pain did not disappear completely. About three of four patients, whose pain disappeared before the end of the follow up, endured one or more relapses within a year. The median time to a relapse was about seven weeks, and its median duration about six weeks. Both the pain and the disability turned out to be less severe during relapses. The median time to recovery for patients whose low back pain developed more than seven weeks before the initial visit, was four weeks longer than for patients with more recently developed low back pain at the initial visit.

Conclusions—The clinical course of low back pain presented in general practice, for the most patients, clearly is less favourable than expected. It takes more

than just a few weeks to recover, and relapses occur within a year in most cases. Fortunately, both the pain and the disability quickly diminish, even if the low back pain does not resolve within a few weeks.

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Low back pain is a common problem in adult life and is frequently presented in general practice. As a really effective treatment seems to be lacking, the management of patients with low back pain constitutes a problem, and knowledge on the course of the low back pain is important to enable the assessment of the prognosis and to evaluate the benefits of therapeutic interventions compared with awaiting the natural course.¹⁻³

The usual classification of low back pain is related to the duration of the complaints (acute, subacute, and chronic), although these terms are defined in many different ways.^{1,2} Low back pain, in general, is assumed to have a favourable course with a duration of a few weeks, although it frequently relapses. In some of the cases the episodes of low back pain will last some weeks longer, and might occasionally become chronic.¹⁻³

This classification fails to take into account some clinically important aspects of the course of low back pain. Firstly, low back pain often runs a recurrent course that is neither acute nor chronic,⁴ and secondly, the clinical problems in low back pain consist of both pain and functional disability, which may both vary in their severity.^{1,5,6}

The treatment of patients with low back pain in general practice constitutes an additional problem. Both recent onset and chronic cases are presented, implying that patients have already undergone some part of the course at the moment they decide to consult the general practitioner. Consequently, studying the course of low back pain presented in general practice should also include gathering information on the pre-clinical course.^{1,2}

This study, reporting a comprehensive view on the clinical course of low back pain, encompasses data on: the duration of the low back pain at the moment patients visit their general practice, the time to recovery, the severity of both the pain and the disability over time, the

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occurrence of a relapse, the severity of the pain and the disability during a relapse, and the differences between recent onset and chronic low back pain patients.

Methods

DESIGN OF THE STUDY

This study is a prospective cohort study on the clinical course of low back pain in consecutive cases presented in general practice. It concerns a one year follow up, by means of monthly questionnaires sent to the patients. The study did not interfere with the usual management of the low back pain by the general practitioners involved. Ethical approval from the Medical Ethical Committee of the Vrije Universiteit was obtained.

STUDY SAMPLE

This study was carried out in 11 general practices, involving 15 general practitioners from Amsterdam and surrounding areas, with a catchment population of about 26 000.

Patients were eligible for this study if they consulted any of these 11 practices for low back pain of any duration between May 1990 and May 1992. Additional criteria were: age over 16 years and complaints of pain in the back (or radiating from the back) in the area between Th12 and the gluteal fold. Pregnant women were not eligible. Consequently, both patients with suspected non-specific low back pain and patients with suspected specific low back pain were included in the study.

MEASUREMENTS

At the initial visit, eligible patients were invited to participate in the cohort study. They were asked to complete a form on the duration and the severity of the low back pain and to provide some demographic data. After inclusion in the studies each patient was monitored for a period of 12 months. The follow up consisted of monthly postal questionnaires on the course of the low back pain and the related disability. The patients were sent a reminder if they did not respond within two weeks after each mailing. If they did not respond to two successive questionnaires and reminders, they were excluded from the remaining part of the follow up.

DURATION OF THE LOW BACK PAIN AT THE INITIAL VISIT

At the initial visit patients were asked to state the duration of the low back pain they were suffering from. Recent onset and chronic low back pain were defined according to the standards of the Quebec Task Force on Spinal Disorders.¹ Recent onset low back pain was defined as having a duration of less than seven weeks at the initial visit. Chronic low back pain was defined as having a duration of seven weeks or more at the initial visit.

CLINICAL COURSE OF THE LOW BACK PAIN

To ascertain the course of the low back pain and the related disability after the initial visit, the monthly questionnaires consisted of: a question asking whether the patient had experienced low back pain in each of the five foregoing weeks, a visual analogue scale at the existing low back pain, and the Roland disability scale.⁷

rienced low back pain in each of the five foregoing weeks, a visual analogue scale at the existing low back pain, and the Roland disability scale.⁷

The answers to the question about the five foregoing weeks were used to calculate a "low back pain diary" for every patient, comprising all 52 weeks of the follow up year. This diary indicated for each week of the follow up year whether or not the patient reported low back pain. Missing values up to four consecutive weeks were substituted according to a predefined set of criteria, depending on the last and consecutive first known values (see appendix).

Data from questionnaires that were returned after more than nine weeks between two questionnaires, resulting in more than four missing weeks on the "low back pain diary", were excluded from the analysis.

The "low-back pain diary" was used to define the clinical course of the low back pain in five different ways:

The time to recovery of the index episode

The time to recovery, that is the duration of the index episode of low back pain, was defined as the number of weeks from the initial visit to the end of the episode.

A four week pain free period was chosen to define the end of an episode, as in most cases the consecutive weeks with low back pain after the index visit were followed by one or more weeks with low back pain, interspersed by a number of weeks without low back pain. In our opinion, it would not be right to ignore these periods. Consequently, the episode was considered to have lasted until the first pain free period of four weeks.

The severity of the pain until recovery from the index episode

The assessment of the severity of the pain until recovery from the index episode was based on a visual analogue scale consisting of a 50 millimetre line with "no pain" on one side extending to "unbearable pain" on the other side. The patients indicated their position on this scale at the initial visit, and also each time they completed the monthly postal questionnaires. The visual analogue scale is widely used for measuring pain, and is shown to be a reproducible and responsive way of measuring pain.^{8,9}

The severity of the disability until recovery from the index episode

The assessment of the severity of the disability until recovery was based on the Roland disability scale, which was indicated by the patient at the initial visit and each time the monthly postal questionnaires were completed. The Roland disability scale is a 24 item questionnaire developed to measure outcome in low back pain patients.⁷ It was derived from the Sickness Impact Profile, and consists of questions on functional disability caused by low back pain. It was validated by comparing the scores with those on the Sickness Impact Profile, and seems to be a responsive measurement for the outcome in low back pain.¹⁰

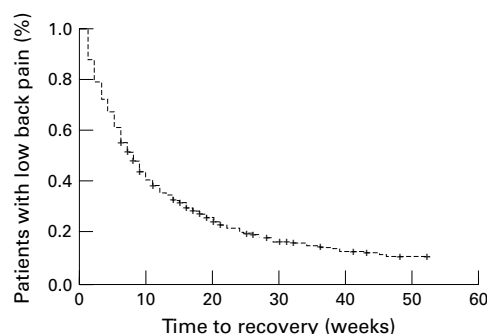


Figure 1 The time to recovery from low back pain presented in general practice. A Kaplan-Meier survival curve on the time to recovery after the initial visit. The nominator at each week of the follow up equals the number of cases still in pain, that is the patients whose index episode had not yet ended. The denominator equals the number of cases still in pain, plus the number of patients whose pain ended in one of the preceding weeks (that is 443 in week 1 and 389 in week 52). Half of the patients whose pain or whose participation to the study ended in a specific week, also were included in the denominator.

The chances of and time to a relapse

A relapse was defined as starting during the first week a patient reported having had low back pain again after a pain free period of four weeks or more. The chance of a relapse was defined to equal the percentage of patients with a relapse among those for whom the index episode had ended before the end of the follow up. The time to a relapse was defined to equal the number of weeks between the end of the earlier episode and the start of the (next) relapse.

The duration of a relapse

The duration of the relapse was considered to have lasted until the first pain free period of four weeks. The duration of a relapse was defined to equal the number of weeks between the start and the end of a relapse.

The severity of the pain and the disability during a relapse

The severity of both the pain and the disability during a relapse was defined to equal the highest result of the measurements during a relapse.

Table 1 Patient characteristics at the initial visit for participants, non-participants, those completing the one year follow up, and drop outs

	Participants (n = 443)	Non-participants (n = 162)	Completers (n = 268)	Drop outs (n = 175)
Age (mean (SD))	43.9 (14.6)	41.0 (16.6)	45.0 (14.3)	42.1 (15)*
Men (%) (95% CI)	48 (43, 53)	58 (50, 66)	45 (39, 51)	52 (45, 59)
Duration at initial visit (%) (95% CI)				
< 1 week	36 (32, 40)	37 (30, 44)	33 (27, 39)	39 (32, 46)
1–7 weeks	42 (37, 47)	44 (36, 52)	45 (39, 51)	39 (32, 46)
> 7 weeks	23 (19, 27)	20 (14, 26)	23 (18, 28)	24 (18, 30)
Median severity of†				
Pain (IQR)	25 (15–33)	22 (13–33)	25 (15–35)	24 (14–32)
Disability (IQR)	13 (8–16)	12 (7–16)	13 (8–16)	14 (7–14)
Sciatica (%) (95% CI)	47 (42–52)	36 (29–43)	52 (46–58)	40 (33–47)
Straight leg raising limited (%) (95% CI)	16 (13, 19)	13 (8, 18)	18 (13, 23)	14 (9, 19)
Sudden onset (%) (95% CI)	48 (43, 53)	58 (50, 66)	48 (42, 54)	47 (40, 54)
History of surgery (%) (95% CI)	6 (4, 8)	3 (0, 6)	6 (3, 9)	6 (2, 10)
Referred at initial visit (%) (95% CI)	56 (51, 61)	42 (34, 50)	55 (44, 61)	57 (50, 64)

*p Value less than 0.05.

†Visual analogue scale for pain, range 0–50, Roland disability scale for disability, range 0–24.

STATISTICAL ANALYSES

Analyses were performed using SPSS-PC and EGRET statistical software.^{11 12}

As most measurements are expected to be skewed, the median and the interquartile range (IQR) are presented. For “time to recovery” a Kaplan-Meier survival curve was calculated. As not all patients completed the follow up year, calculating such a curve most efficiently made use of the available data (fig 1). Improvement rates were based on paired analysis. This means that for each individual patient the change between baseline measurement and follow up measurement were calculated for the outcome measure at issue. These change scores were subsequently used for the calculation of mean (median) improvements on group level. The clinical course was analysed for the total population, for the subgroups recruited in different general practices, and also for the subgroups with recent onset and chronic low back pain at the initial visit. Only differences beyond chance ($p < 0.05$) are reported in the results.

Results

STUDY POPULATION

We identified 605 eligible patients during the recruitment period. Of these, 443 were actually included in the follow up. At the index visit, 315 patients were referred to either a physiotherapist ($n = 303$) or a consultant ($n = 12$). Two hundred and eight of the included patients were having pain radiating into the leg (124 up to the knee and 84 beyond the knee, respectively). Thirty five patients were diagnosed as possibly having specific low back pain, that is low back pain resulting from disc protrusion, ankylosing spondylitis, or neoplastic diseases. In nine of these patients disc protrusion was confirmed by a consultant, and in one patient ankylosing spondylitis was diagnosed within the follow up year. In general, eligible patients who were not included in the follow up were a few years younger, more often men, more often suffering from non-radiating low back pain with a sudden onset, and were less often referred to either a physiotherapist or a consultant ($p < 0.05$). The follow up was completed beyond the end of the low back pain episode that was present at the initial visit of 389 patients (88%). A total of 269 patients (60%) fully completed the one year follow up. However, the 175 patients with an incomplete follow up were a few years younger and more often suffered from non-radiating low back pain ($p < 0.05$) compared with patients who did complete the one year follow up.

Table 1 shows the relevant patient characteristics. The outcome (time to recovery, severity, etc) in the subgroups recruited in different practices did not differ beyond chance, although the number of patients recruited in the 11 participating general practices varied considerably.

THE DURATION OF THE LOW BACK PAIN AT THE INITIAL VISIT

At the initial visit, 77% ($n = 342$) of the patients appeared to have recent onset low back pain of less than seven weeks' duration, and 23%

Table 2 Severity of the pain and the disability during the follow up for patients whose index episode had not yet ended

	Pain** Median IQR (missing)	Disability** Median IQR (missing)	Number	Drop outs†
Index visit	25 (15–34 (42))	13 (8–16 (22))	443	
Time after index visit				
4 weeks	16 (9–23 (26))		320	0
12 weeks	9 (5–17 (19))	5 (1–10 (6))	148	26
24 weeks	8 (3–15 (8))	3 (1–9 (2))	71	43
36 weeks	11 (2–23 (5))	5 (1–13 (1))	41	50
52 weeks	10 (5–16 (4))	6 (2–10 (2))	25	54

**Visual analogue scale for pain, 50 point scale, Roland disability scale, 24 point scale.

n=Number of patients whose index episode had not yet ended.

†Drop outs=the number of drop outs before the end of the index episode.

(n=101) to have chronic low back pain of more than seven weeks' duration. The median duration preceding the initial visit was 10 days (IQR 5–40).

THE CLINICAL COURSE OF THE LOW BACK PAIN

The time to recovery of the index episode

The median time to recovery was seven weeks (IQR 3–16). According to the Kaplan-Meier curve, 70% still had low back pain after four weeks, 48% after eight weeks, 35% after 12 weeks, and at the end of the follow up year 10% of the patients still had low back pain. The rapidly diminishing slope of the survival curve indicates that the chance of low back pain resolving within the following week is highest during the first weeks after the initial visit, diminishing almost to zero at the end of the follow up year (fig 1). In chronic cases, the time to recovery appeared to be longer than in recent onset cases ($p<0.05$). The median time to recovery in chronic cases was 10 weeks (IQR 5–25), and in recent onset cases the median time was six weeks (IQR 3–14).

The severity of the pain until recovery from the index episode

At the initial visit the median pain was 25 (IQR 15–34) on the 50 point scale. The median pain, if still having pain, quickly diminished after the initial visit and seemed to stabilise if patients did not recover (table 2). The median improvement on the 50 mm scale (paired analysis), in patients whose index episode had not yet ended, was 7 mm during the first four weeks (IQR 12–1), 7 mm during the second period of four weeks (IQR 10–1), 2 mm in the next period of four weeks (IQR improved 5–aggravated 1), and 0 mm during the remaining part of the follow up (IQR improved 6–aggravated 7).

Table 3 The severity of the pain and the disability during relapses

	Pain* Median IQR (missing)	Disability* Median IQR (missing)	Number†
First relapse	15 (8–22 (133))	6 (2–11 (121))	295
Second relapse	14 (6–22 (96))	7 (3–12 (93))	182
Third relapse	12 (5–25 (52))	6 (2–12 (60))	110
Fourth relapse	15 (6–18 (33))	7 (2–11 (29))	51
Fifth relapse	15 (9–18 (12))	2 (9–14 (12))	17

*Visual analogue scale for pain, 50 points scale, Roland disability scale, 24 points scale.

The severity during relapses was defined to equal the highest result of any measurement during a relapse. Data on the sixth and seventh relapses were not calculated, because only two patients endured a sixth and only one patient endured a seventh relapse.

†Number of patients with the number of relapses indicated.

The severity of the disability until recovery from the index episode

At the initial visit the median score on the 24 point Roland disability scale was 13 (IQR 8–16). The median disability, if still having pain, also quickly diminished after the initial visit, and seemed to stabilise if patients did not recover (table 2). The median improvement on the 0–24 point Roland disability scale (paired analysis), in patients whose index episode had not yet ended, was three points during the first four weeks (IQR 7–1), three points during the second period of four weeks (IQR 5–1), one point in the next period of four weeks (IQR 2–0), and one point during the remaining part of the follow up (IQR improved 5–aggravated 2).

The improvement in both the pain and the disability during the first and second period of four weeks appeared to be somewhat higher in recent onset cases than in chronic cases ($p<0.05$). The median improvement in pain in chronic cases was 5 mm (IQR 7–1) during the first four weeks, and 3 mm (IQR 9–1) during the second period of four weeks. In recent onset cases it was 8 mm in both periods (IQR 14–2 and 11–2, respectively). The median improvement in disability in chronic cases was one point (IQR 2–0) during the first four weeks, and also one point (IQR 3–0) during the second period of four weeks, also. In recent onset cases it was four points in both periods (IQR 7–1 and 6–1, respectively).

The chances of and time to a relapse

Almost three of every four patients, for whom the index episode ended before the end of the follow up, that is 295 of 389 (76%), endured a relapse. The median number of relapses, among those who were having any, was two (IQR 1–3, range 1–7). The median time to the first relapse, after the index episode ended, was seven weeks (IQR 5–12). Moreover, the median time to a relapse seems to have a constant value. The median time to the second, third, fourth, and fifth relapse was seven, eight, six, and seven weeks, respectively.

The duration of a relapse

The median duration of a relapse amounted to three weeks (IQR 1–7). The duration of the first relapse was somewhat longer than the duration of ensuing relapses. The median duration of the first relapse was three weeks (IQR 1–6), whereas it was two weeks for the second and third relapse, and only one week for the fourth and fifth relapse.

The severity of the pain and the disability during a relapse

There was a wide variety in the severity of the pain and the disability during relapses as indicated by the IQR (table 3). However, although it was defined to equal the highest result of any measurements during a relapse, the mean pain and disability during relapses, in general, was less than at the initial visit.

Discussion

Our knowledge on the course of low back pain presented in general practice seems to be rather poor.^{1-6 13} We reviewed the medical literature, starting with the extensive report published by the Quebec Task Force on Spinal Disorders, using MEDLINE from 1986 to 1996 (key words: *backache or low back and course or prognosis/tic*). Including references from identified publications, 10 studies were found on the course of low back pain in general practice.¹⁴⁻²³ Seven of these 10 studies included acute cases only, that is cases with less than 72 hours,¹⁵ less than two weeks,^{16 21} less than four weeks with low back pain,^{19 22} less than 10 weeks,¹⁴ or acute cases with undefined duration on inclusion.²³ The duration of the follow up in these studies varied: four weeks in two studies,^{16 22} three months in two others,^{15 19} six months in two,^{14 21} and one year in another.²³ Two studies reported on the pain only,^{16 21} and none of them reported on the occurrence of relapses or the course of the low back pain between the start and the end of the follow up.

Low back pain presented within 72 hours after onset seemed to have the most favourable clinical course.¹⁶ However, in general, the duration in acute cases presented in general practice seemed to be less favourable than we expected it to be from publications on population based studies.^{1-6 13} After four weeks about 70% of the cases, and after six months about 30% of the cases still were in pain. Only one study reported on the outcome after one year.²³ In this study of acute cases of undefined duration, about 20% were still in pain after one year. The results of the identified studies offer only a fragmentary view on the course of low back pain presented in general practice. The results are not sufficient to assess prognosis adequately.² This study, reporting a more comprehensive view on the clinical course of low back pain, intended to answer some of the questions left unanswered by the available publications.

We studied a cohort of consecutive cases presenting with low back pain in general practice. The clinical aspects of the enrolled cohort have been described. Postal questionnaires were used to measure the severity of both the pain and the disability at each point of follow up. Data have been provided on those lost to follow up. The one year follow up was of sufficient duration to determine the time to recovery from the index episode in almost all cases, and to detect the event of one or more relapses in most of the cases where there was recovery within the one year follow up. Finally, information is provided on different aspects of low back pain, including both pain and disability.

We have used a prospective design with frequent measurements. Thus, the patients were able to state precisely whether and when they still or again were in pain, and how severe the pain and the related disability was. Recall bias, leading to an underestimation of the frequency, the duration, and the severity is,

therefore, assumed to play a less important part in this study than in other designs.^{2 3 24}

Nevertheless, it should be taken into account the limitations of this study. First of all, the study population consisted of consecutive cases presented in general practice. Consequently, the results can only be representative for similarly selected populations.^{13 16}

Almost certainly not all eligible patients were identified. Dutch data on consultation rate for low back pain in general practice suggest that up to 50% of the eligible patients may not have been identified. The number of identified patients also varied considerably between the practices involved. The differences between expected and actual recruitment and the differences between practices may indicate local differences between the populations of differently located practices that are not related to the outcome of this study, or may indicate a large potential for recruitment bias. However, data on eligible but not recruited patients are lacking and comparing the probable under recruitment is not possible, because none of the preceding studies reports on the recruitment rate.¹⁴⁻²³

Furthermore, not all patients who were selected by their general practitioner participated in the follow up, and some of the patients included did not fully complete the follow up period. Patients with less serious low back pain participated somewhat less often or did not complete the follow up. Added to the probable under recruitment, this may have resulted in a selected study population with an over representation of the more serious cases.

Moreover, the way the severity of the low back pain was measured still proves to be unsatisfactory, although it was measured more precisely than in most previous studies. Even in our study, using monthly postal questionnaires, some individual variation in severity may not have been detected.

In most cases a general practitioner would not be able to establish a specific diagnosis without the help of a consultant, and it was not possible to arrange for assessment by a consultant of all patients. Consequently, it was decided to include in the study both patients who probably had non-specific low back pain as well as those who possibly had specific low back pain. Only 35 patients (6%) were diagnosed as possibly having specific low back pain, while the specific diagnosis was confirmed by a consultant in only 10 of these cases (2%). This low prevalence of specific low back pain supports the arguments in favour of a reserved policy towards referral to a consultant.¹

Low back pain presented in general practice seems to take more than just a few weeks to resolve. The median time to recovery was seven weeks. At 12 weeks and at the end of the follow up 35% and 10% of the population respectively was still suffering from low back pain. These results seem to be in line with the results of similar, but less comprehensive studies on the course of low back pain in general practice.^{14 15 20-23} Fortunately, even in this selected population, with a possible over

representation of the more serious cases, the median severity of both the pain and the disability quickly diminished and the low back pain was resolved within a few weeks. The median severity both in lasting low back pain and during relapses was also less than at the initial visit. Moreover, because of the large variation in duration of the low back pain at inclusion, the results suggest that not the duration, but the severity of the complaints might be the decisive reason for visiting a general practice. The differences between patients with a recent onset and those with existing chronic low back pain at inclusion were less than we would have expected. The only difference beyond chance seemed to be that the median time to recovery in chronic cases exceeded the median in recent onset cases by a few weeks. These results indicate that the clinical course of low back pain is determined by its duration at the initial visit to some extent only. The relapse rate by far exceeded our expectations. About three of every four patients endured one or more relapses within a year. Biering-Sørensen²⁵ reported a one year relapse frequency of about 40% in a general population, and Abenhaim *et al*²⁶ reported a one year relapse frequency of 20% in an occupational setting. Our review of the medical literature did not reveal any data on the relapse rate of low back pain in general practice. Although, data from two studies suggest that the relapse rate in low back pain presented in general practice may be very high indeed. Von Korff *et al*¹⁸ found that about 75% of the patients still or again had low back pain within the last month of a one year follow up and Klenerman *et al*²⁷ reported on a population in which 88 of 123 subjects (72%) had intermittent pain during a one year follow up.

As was stated before, present knowledge on the course of low back pain presented in general practice is poor.¹⁻⁷ For that reason, the results of this study may be of great value in the field of patient care. Reliable information on the time to recovery, the severity of the complaints over time, and the chances of a relapse are important to assess prognosis. This study shows that low back pain is resolved or diminishes quickly after a visit to the general practitioner. Moreover, the severity during the frequent relapses is also less than at the time of the initial visit to the general practice. Consequently, in most cases, self care and watchful waiting, in terms of efficiency, may be preferred to therapeutic intervention.^{1-2, 5-7}

However, as was suggested by Von Korff *et al*^{2-4, 11} the high relapse rate indicates that our concept of low back pain as an incidental and temporary problem may be false in many cases presented in general practice. Low back pain in many cases should be viewed as a recurrent illness. This different view implies that the treatment of low back pain should be changed accordingly. Therapeutic intervention may be highly valid if relapses are prevented, although it may be in vain for a single episode.

Reviewing the medical literature it has to be concluded that this suggests an alternative way of viewing low back pain, both in research

issues and in patient care. Our knowledge on the ability to prevent relapses is very limited.¹⁻² Accordingly, we do not know whether to encourage or discourage medical intervention in recurrent low back pain. However, because of the lack of evidence for successful prevention of relapses or for effective therapeutic intervention for a single episode of low back pain a restricted management policy seems to be appropriate.^{1-5, 6}

The study was supported by grants from the Dutch Organisation for Scientific Research.

Appendix

Criteria to substitute missing values on the low back pain diary

Known and missing values*		Data after substitution*	
1	.	1	
1	.	2	
2	.	2	
2	.	1	
1	.	.	1
1	.	.	2
2	.	.	2
2	.	.	1
1	.	.	1
1	.	.	2
2	.	.	2
2	.	.	2
1	.	.	1
1	.	.	1
1	.	.	2
2	.	.	2
2	.	.	2
1	.	.	1
1	.	.	1
1	.	.	2
2	.	.	2
2	.	.	2
1	.	.	1
1	.	.	1
1	.	.	2
2	.	.	2
2	.	.	2
1	.	.	1

* 1 = Reported low back pain. 2 = Reported no low back pain.

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Unusual and memorable

Series editor: Gary D Wright

A 36 year old woman developed seropositive nodular erosive rheumatoid arthritis at the age of 18. There was no evidence of psoriasis nor was there any family history of psoriasis or psoriatic arthropathy. Despite therapeutic attempts with non-steroidal anti-inflammatory drugs, D-penicillamine, azathioprine, corticosteroids, and methotrexate, she developed over the years the rare type (5%) of resorptive arthropathy of rheumatoid arthritis,¹ simulating typical changes of psoriatic arthritis. Radiographs of the hands showed resorption of the ulnar styloid, carpal collapse and pencil in cup deformities of the MCP joints, with severe resorptive changes in the PIP joints (fig 1).

Multiple surgical procedures, including synovectomies, total hip and knee replacements had to be performed over the years.

Other differential diagnosis of arthritis mutilans include neuropathic arthropathies such as syringomyelia and leprosy, and chronic infections of the soft tissue. Multicentric reticulohistiocytosis may also lead to resorptive arthropathy, and occasionally extensive arthritis mutilans may be seen in juvenile rheumatoid arthritis, scleroderma or gout.



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